

constructing a club having the determined design loft and lean angle, the club being a wood, an iron, or a wedge.

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A 2. (Amended) The method of claim 1, [further comprising the step of selecting at least one of a lie, a length and an offset for the club, and tailoring the lean angle] wherein the lean angle is determined based, at least in part, upon [such selection] at least one of the length, lie, and offset of the club.

3. (Amended) The method of claim 2, wherein the swing characteristic is at least one of:
(i) a location of the hands of the golfer upon impact of the club with a golf ball;
(ii) an effective loft of [the] a club for the golfer;
(iii) a relative difference between [the] design loft and [an] effective loft of [the] a club for the golfer;

(iv) a location of the golf ball in the stance of the golfer when the golfer addresses a golf ball;
(v) a location of the hands of the golfer when the golfer addresses a golf ball; and
(vi) a location of the hands of the golfer with respect to a location of a golf ball in the stance of the golfer when the golfer addresses a golf ball.

9. (Amended) The method of claim 2, wherein [the selecting step and the tailoring step] determining the lean angle and constructing the club are repeated for a plurality of golf clubs.

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A 10. (Amended) The method of claim 9, wherein [the tailoring step] determining the lean angle includes [the] a step of correlating [the location of the golf ball in the stance of the golfer when the golfer addresses a golf ball] across the plurality of clubs a swing characteristic selected from the group consisting of:

(i) a location of the hands of the golfer upon impact of the club with a golf ball;
(ii) an effective loft of a club for the golfer;
(iii) a relative difference between design loft and effective loft of a club for the golfer;
(iv) a location of the golf ball in the stance of the golfer when the golfer addresses a golf ball;
(v) a location of the hands of the golfer when the golfer addresses a golf ball; and

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a (vi) a location of the hands of the golfer with respect to a location of a golf ball in the stance of the golfer when the golfer addresses a golf ball.

11. (Amended) The method of claim 10, wherein the correlating step includes locating the golf ball progressively forward in the golfer's stance, [away from] towards the target, for increasingly longer clubs in the plurality of clubs.

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a 14. (Amended) The method of claim 9, wherein [the tailoring step] determining the lean angle includes the step of substantially matching the particular swing characteristic for each club within the plurality of clubs.

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a 17. (Amended) A method of designing a set of golf clubs to be used by a golfer, comprising the steps of:
determining a design loft for each club;
selecting at least one of a lie, a length and an offset for each club; and
[tailoring] determining a lean angle [of] for each club to obtain a desired effective loft upon impact of each club with a golf ball, the lean angle being a function of the length of each club, wherein at least one club in the set has a nonzero lean angle.

Please add new claims 21-28 as follows:

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a --21. The method of claim 1, 2, or 3, wherein the determined lean angle is greater than 0 and less than 15 degrees.--

--22. The method of claim 1, 2, or 3, wherein the determined lean angle is greater than 3 and less than 10 degrees.--

--23. The method of claim 1, 2, or 3, wherein the effective loft for the golfer is approximately equal to the design loft.--

--24. The method of claim 17, wherein the lean angle is constant for the set of clubs.--

--25. The method of claim 17, wherein the lean angle increases with club length.--

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--26. a golf club, comprising:
a head having a sole and an impact face, the impact face having a predetermined design loft; and

a shaft connected to the head via a hosel, the connection arranged so that the shaft forms a lean angle with the vertical when the head rests on its sole, the lean angle being at least 3 degrees from the vertical.--

--27. The golf club of claim 26, wherein the lean angle is in the range of 3 to 15 degrees.--

--28. The golf club of claim 26, wherein the lean angle is in the range of 3 to 10 degrees.--

No new matter is entered by any of these amendments.

Remarks

The claimed invention

The present invention comprises methods of constructing one or more golf clubs for a particular golfer by adjusting the lean angle of the clubs for the golfer. The lean angle is the angle between (i) a projection of the centerline of the shaft of the club onto a vertical plane, the plane being along an intended line of play, and (ii) a vertical line in the vertical plane. The lean angle for each of the one or more golf clubs may be selected by considering a swing characteristic of the golfer, such as the location of the hands of the golfer upon impact with a golf ball, the effective loft of a club for the golfer, the difference between effective loft and design loft of a club for the golfer, or the relative or absolute location of the golf ball or the hands of the golfer in address position.

The cited art

Muldoon is directed to an apparatus for measuring the angle of a golf club shaft in address position, and to a vise for bending the hosel of a golf club. The vise shown is adapted to hold a blade putter or other nonlofted club.